



COPY OF PAPERS  
ORIGINALLY FILED

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John P. Millward

Examiner:

Serial Number: 10/081,443

Art Unit: 1723

Filed: February 22, 2002

Atty Docket No.: 334-1-002

For: "Dry Crop Supplement Injection Systems, Micronized Crop Supplements for Use in Injection Systems, and Methods for Injection of Crop Supplements"

**TRANSMITTAL OF DRAWINGS**

Box Missing Parts  
Commissioner for Patents  
Washington, D.C. 20231

Sirs:

Transmitted herewith are drawings with corrected margins in the above-identified patent application.

Respectfully,

MALLINCKRODT & MALLINCKRODT

Robert R. Mallinckrodt  
Attorney for Applicant  
Registration No. 26,565  
Customer No. 27469

Salt Lake City, UT  
May 15, 2002

gen:p334 Millward\002-drw submit.wpd

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Box Missing Parts; Commissioner for Patents, Washington, DC 20231, on this 15 day of May, 2002.

Signed: Dated: May 15, 2002  
Robert R. Mallinckrodt



COPY OF PAPERS  
ORIGINALLY FILED

**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: John P. Millward

Examiner:

Serial Number: 10/081,443

Art Unit: 1723

Filed: February 22, 2002

Atty Docket No.: 334-1-002

For: "Dry Crop Supplement Injection Systems, Micronized Crop Supplements for Use in Injection Systems, and Methods for Injection of Crop Supplements"

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Box Missing Parts  
Commissioner for Patents  
Washington, D.C. 20231

Sir:

Responsive to the Notice to File Corrected Application Papers of March 15, 2002, applicant amends as follows:

The Abstract of the Disclosure is written in amended form as follows:

A dry supplement injection system produces a supplement slurry which is continuously introduced into a flow of irrigation water. The injection system includes a hopper having a cylindrical upper portion and a tapered lower portion terminating at a slurry outlet opening. An inverted perforated funnel assembly is disposed within the hopper. A spray nozzle connected to a water inlet pipe sprays water onto the inner surface of the funnel such that particles of micronized supplement in the hopper are washed through the perforated funnel forming a slurry. A mixing pan disposed below the hopper acts as a reservoir to hold slurry until pumped out through a slurry pump

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Box Missing Parts ; Commissioner for Patents, Washington, DC 20231, on this 15 day of May, 2002.


Signed: Robert R. Mallinckrodt Dated: May 15, 2002  
Robert R. Mallinckrodt

which pumps the slurry into a pressurized irrigation water pipe. Gravity feed of the slurry may replace the slurry pump for applications where the irrigation water is non-pressurized such as flood irrigation.

Please charge any additional fees due, or deposit any overpayments, to Deposit Account No. 13-1175 of the undersigned.

Respectfully,

MALLINCKRODT & MALLINCKRODT



Robert R. Mallinckrodt  
Attorney for Applicant  
Registration No. 26,565  
Customer No. 27469

May 15, 2002  
Salt Lake City, UT  
gen:p\334 Millward\002-new abstract.wpd



### Version with Markings to Show Changes Made

A dry supplement injection system [and method for fertigation of crops, and a micronized supplement for use in the dry supplement injection system to fertilize the crops. The injection system is connectable to a water supply to produce] produces a supplement slurry [with the supplement] which is continuously introduced into a flow of irrigation water [for watering the crops]. The injection system includes a hopper having a cylindrical upper portion [having a supplement inlet opening] and a tapered lower portion terminating at a slurry outlet opening. [A] An inverted perforated funnel assembly is disposed within the hopper [that includes an inverted, perforated funnel with a vertically disposed inlet pipe that extends through an upper opening of the funnel and which is clamped to the funnel, with a]. A spray nozzle connected to a [lower end of the] water inlet pipe [to spray] sprays water [onto an inner surface of the funnel. An inlet water pipe system includes a main pipe that connects to the water source through an outer wall of the hopper to the inlet pipe and the spray nozzle. Water discharged from the spray nozzle impinges on] onto the inner surface of the funnel such that particles of micronized supplement in the hopper are washed through the perforated funnel forming a slurry. [The particles are of a small size such that any undissolved particles do not readily settle out of the slurry.] A mixing pan disposed below the hopper acts as a reservoir to hold slurry until pumped out [thereof through an outlet water pipe system that includes] through a slurry pump which [draws slurry from the mixing pan and] pumps the slurry [under pressure] into a pressurized irrigation water pipe [through which the flow of irrigation water flows for irrigating the crops]. Gravity feed of the slurry may replace the slurry pump for applications where the irrigation water is non-pressurized such as flood irrigation. [A float valve connected to the

main water pipe assures a minimum level of slurry is contained within the mixing pan, water which enters the mixing pan through the float valve entering tangentially to stir the slurry to further minimize settling of undissolved particles in the mixing pan.]

COPY OF PAPERS  
ORIGINALLY FILED

03C0



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/081,443	02/22/2002	John P. Millward	334-1-002

27469  
MALLINCKRODT & MALLINCKRODT  
10 EXCHANGE PLACE, SUITE 510  
SALT LAKE CITY, UT 84111

CONFIRMATION NO. 9392

## FORMALITIES LETTER



\*OC00000007650814\*

Date Mailed: 03/15/2002

## NOTICE TO FILE CORRECTED APPLICATION PAPERS

*Filing Date Granted*

This application has been accorded an Application Number and Filing Date. The application, however, is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a)

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. (5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);
- An Abstract not to exceed 150 words in length, commencing on a separate sheet (37 CFR 1.72(b)).

*A copy of this notice **MUST** be returned with the reply.*

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE